

Welding Procedure Specification (WPS)

Location: **CERN bat 276**

Manufacturer's Welding Procedure:

Reference n°: **N/A**

WPAR n°: **N/A**

Welder's Name: **Claude Masure**

Welding Process: **TIG**

Joint Type: **4 sections**

Welding Preparation Details (Sketch): **Guiding the inner tube in the outer tube**

Examiner or examining body: **N/A**

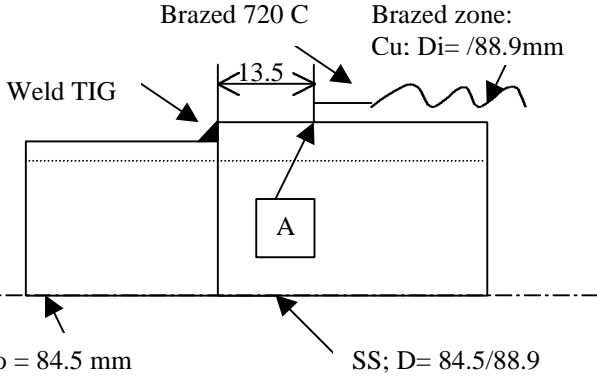
Method of Preparation and Cleaning: **ungreased**

Parent Material Specification: **304 L**

Material Thickness (mm): **3.2 mm**

Outside Diameter (mm): **88.9 mm**

Welding Position: **in position**

Joint Design	Welding Sequences
 <p>Brazed 720 C</p> <p>Brazed zone: Cu: Di= /88.9mm</p> <p>13.5</p> <p>Weld TIG</p> <p>SS; Do = 84.5 mm</p> <p>SS; D= 84.5/88.9</p> <p>A</p>	<ol style="list-style-type: none"> 1- Water cooled the brazed zone thanks to a fabric 2- Cleaning and tag welded 3- Run of 1/4 of the diameter 4- Air cooled on the run 5- Water cooled the fabric 6- Repeat the sequence 3-4-5, four times <p>Control of the temperature with the thermometer A</p>

Welding details

Run	Process	Size of filler metal	Current (A)	Voltage (V)	Type of current Polarity	Wire feed speed (m/min)	Travel speed (cm/min)
1	TIG	D= 1 mm	65/20	N/A	impulsion 60/40%	manual	N/A

Filler Metal : **317 L**

Classification: **DIN 8556**

Trade Name: **Bohler Thyssen**

Any Special Baking or Drying: **N/A**

Gas/Flux:

Shielding: **Ar**

Backing: **Ar**

Gas Flow Rate (l / min.):

Shielding: **10 l**

Backing: **10 l**

Tungsten Electrode Type/Size: **1.6 /Tungsten**

Preheat Temperature: **N/A**

Details of Back Gouging/Backing: **N/A**

Interpass Temperature: **1 pass**

Post-Weld Heat Treatment and/or Ageing:

Time, Temperature, Method: **45 min, 400 degrees C, manual**

Heating and Cooling rates: **Controlled**

Test carried out in the presence of: **Christine Darve**

Other information: The brazed zone makes use of:

- **Cu 45-Zn 20/25 Arg 22**
- **Temperature : 700 degrees C**
- Trade Name: **Castolin**

Manufacturer Name, date and signature	Examiner or examining body Name, date and signature
Claude Masure, 22-3-00	Ch. Darve, 22-03-00